PATENT COOPERATION TREATY

	PATENT (COOPERAT	ION TREAT	I'Y
m the		·		REC'D 07 AUG 2006
ERNATIONAL SEARCHING	3 AUTHORITY			PCT POT
CHARLES R. NOLD SERKELEY NATIONAL LABORATORY ONE CYCLOTRON ROAD SERKELEY, CA 94720		IN	WRIT (TERNATIO)	TTEN OPINION OF THE NAL SEARCHING AUTHORITY
			_	(PCT Rule 43bis.1)
•	•	(da	TO TOTAL PORT A	02 AUG 2006
Applicant's or agent's file refe	rence	FO	R I Old I	See paragraph 2 below
B-2018PCT		i Gli - doto (day)	month/year)	Priority date (day/month/year)
International application No.		al filing date (day/	1	22 March 2004 (22.03.2004)
·	22 March 2	2005 (22.03.2005)	md IPC	
CT/US05/09333 International Patent Classifica	ation (IPC) or both nation	nal classification a		
IPC: B32B 5/16(2006.0 USPC: 428/403;427/2.1,12 Applicant	.8			
THE REAGENTS OF THE	UNIVERSITY OF CAL	IFOKNIA		
1. This opinion contains in Box No. I	Basis of the opinion		-	
Box No. II	Priority	i-ion with regal	rd to novelty, inv	entive step and industrial applicability
Box No. III				
Box No. IV	Lack of unity of inven	ntion		inventive step or industrial
Box No. V	Reasoned statement u applicability; citations	nder Rule 43bis.1 s and explanations	(a)(i) with regard supporting such	l to novelty, inventive step or industrial statement
Box No. VI	Certain documents ci	ted		
	Certain defects in the	e international app	lication	·
Box No. VII Box No. VIII	Certain observations	on the internation	al application	•
Authority other than	this one to be the IPEA of this International Sea	A and the chosen arching Authority	will not be so cor	will be considered to be a written opinion of the loes not apply where the applicant chooses and the International Bureau under Rule 66.1 bis(b) insidered.
IPEA a Written rep.	20 or before the expiration	on of 22 months i	ten opinion of the liments, before the rom the priority of	he IPEA, the applicant is invited to submit to the ne expiration of 3 months from the date of mailing date, whichever expires later.
For further options,	see Form PCT/ISA/220.	•		
.	see notes to Form PCT/I			1 55 1 1/1/2
			letion of this opi	nion Authorized officer
Name and mailing add	ress of the ISA/ US	1		Felisa Hiteshew
Mail Stop PC1 Commissioner	for Patents	30 May 2006	(30.05.2006)	Telephone No. (571) 272-1463
P.O. Box 1450 Alexandria, Vi	rginia 22313-1450			Telephone No. (511)
Form PCT/ISA/237 (cov	ver sheet) (April 2005)			

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09333

INTERNATIONAL SEARCHING A	JIHORII	101/0503.0775	
x No. I Basis of this opinion			
With regard to the language, this opinion has been es	stablished on the basis of:		
		· · · · · · · · · · · · · · · · · · ·	ne purposes of
a translation of the international application in	nto, which is the lang		
with regard to any nucleotide and/or amino acid s invention, this opinion has been established on the b	sequence disclosed in the in	ternational application and necessar	y to the claimed
a. type of material		· .	
a sequence listing		•	
table(s) related to the sequence listing			
b. format of material		•	
on paper			•
in electronic form			
c. time of filing/furnishing	• •		,
contained in the international applic	ation as filed.		
filed together with the international	application in electronic for	m.	
furnished subsequently to this Author	ority for the purposes of sea	rch.	
In addition, in the case that more than one or furnished, the required statements that application as filed or does not go beyond	e version or copy of a seque to the information in the sul I the application as filed, as	nce listing and/or table(s) relating the osequent or additional copies is ide appropriate, were furnished.	ereto has been filed ntical to that in the
4. Additional comments:			
4. Additional Costs			
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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

Form PCT/ISA/237 (Box No. V) (April 2005)

International application No. PCT/US05/09333

No. V Reasoned statement under Rule applicability; citations and expla				
statement .	Ol-i	1-31		YES
Novelty (N)	Claims			ио
	Ciuii			YES
Inventive step (IS)		1-31		NO
	Claims	NONE		
	Claims	1-31		YES
Industrial applicability (IA)		NONE		NO
Citations and explanations: aims 1-31 meet the criteria set out in PCT Article mprising a nanoreactor shell having a thickness ell is not perfectly single crystalline, further con	le 33(2)-(3), beca of at least 0.5nm nprising a nanopa	use the prior art does no , said nanoreactor shell out tricle disposed within the	t teach or fairly sugge enveloping a space, whe he space.	st a nanoreactor, herein said nanoreacto
ell is not perfectly single crystattie, fattion out				
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PATENT COOPERATION TREATY

n tha	PATENT COOPE		REC'D 07 AUG 2006	
n the ERNATIONAL SEARCHING AUTHO	DRITY	· .	1	
To: CHARLES R. NOLD BERKELEY NATIONAL LABORATORY ONE CYCLOTRON ROAD BERKELEY, CA 94720		WRI INTERNATIO	PCTWFO POT TTEN OPINION OF THE NAL SEARCHING AUTHORITY	
			(PCT Rule 43bis.1)	
		Date of mailing (day/month/year)	02 AUG 2006	
Applicant's or agent's file reference		FOR FURTHER ACTION See paragraph 2 below		
IB-2018PCT			Priority date (day/month/year)	
International application No.	International filing date		22 March 2004 (22.03.2004)	
	22 March 2005 (22.03.	.2005)	ZZ WIAICH ZOO.	
PCT/US05/09333 International Patent Classification (IPC) or both national classific	ation and it		
IPC: B32B 5/16(2006.01)				
USPC: 428/403;427/2.1,128				
Applicant	TOTAL SECRNIA			
THE REAGENTS OF THE UNIVERS	SITY OF CALIFORNIA			
1. This opinion contains indications	relating to the following it	ems:		
1. This opinion contains indications	Totaling to me		•	
Box No. I Basis of	the opinion	·		
Box Moral		n regard to novelty, inv	entive step and industrial applicability	
l L				
Box No. IV Lack of	unity of invention		1	
Box No. V Reason	ed statement under Rule 4	3bis.1(a)(i) with regard	d to novelty, inventive step or industrial statement	
applica applica	ed statement under Rule 4. bility; citations and explan	nations supporting such	·	
Box No. VI Certain	documents cited			
Box 110. 11	defects in the internation	al application		
Box No. VII Certain	i delects in the inter	national application		
Box No. VIII Certain	observations on the inter	liational approved		
Authority other than this one that written opinions of this Int	o be the IPEA and the chernational Searching Auth	osen IPEA has notificated will not be so cor		
IPEA a written reply together,	re the expiration of 22 mor	a written opinion of the amendments, before the other than the priority d	he IPEA, the applicant is invited to submit to the se expiration of 3 months from the date of mailing late, whichever expires later.	
For further options, see Form 1	PC171SA/220.			
3. For further details, see notes to	o Form PCT/ISA/220.		7010	
	SA/IIS Date of	completion of this opir	nion Authorized officer	
Name and mailing address of the Mail Stop PCT, Attn: ISA/		2006 (30.05.2006)	Felisa Hiteshew	
Commissioner for Patents	30 May	2000 (30.03.2000)	Telephone No. (571) 272-1463	
P.O. Box 1450 Alexandria, Virginia 22313	3-1450		Telephone inc. (3/1) 2/2	
Alexandria, Vilginia 2251-				

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09333

INTERNATIONAL SEARCHING AUTHORITY	PC170303707333
ox No. I Basis of this opinion	
	·
With regard to the language, this opinion has been established on the basis of the international application in the language in which it was file a translation of the international application into, which is the linternational search (Rules 12.3(a) and 23.1(b)). With regard to any nucleotide and/or amino acid sequence disclosed in the discount of the participants of the passis of:	anguage of a translation furnished for the purposes of
. With regard to any nucleotide anu/or attitud dela basis of: invention, this opinion has been established on the basis of:	
a. type of material	
a sequence listing	
table(s) related to the sequence listing	·
b. format of material	
on paper	•
in electronic form	
c. time of filing/furnishing contained in the international application as filed.	
filed together with the international application in electronic	; form.
filed together with the histority for the purposes of furnished subsequently to this Authority for the purposes of	search.
1	
3. In addition, in the case that more than one version or copy of a second furnished, the required statements that the information in the application as filed or does not go beyond the application as filed.	quence listing and/or table(s) relating thereto has been filed subsequent or additional copies is identical to that in the, as appropriate, were furnished.
4. Additional comments:	-
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	•
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Form PCT/ISA/237(Box No. I) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US05/09333

INTERNATIONAL SEARCHING	inventive step or industrial		
Box No. V Reasoned statement under Rule applicability; citations and expla	43 bis.1(a)(i) with regard tanations supporting such st	atement	
1. Statement	•	· YE	ES
Novelty (N)	Claims 1-31 Claims NONE	NC	
Inventive step (IS)	Claims 1-31 Claims NONE		
Industrial applicability (IA)	Claims 1-31 Claims NONE		ES IO
1lorotions'			

Claims 1-31 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a nanoreactor, comprising a nanoreactor shell having a thickness of at least 0.5nm, said nanoreactor shell enveloping a space, wherein said nanoreactor shell is not perfectly single crystalline, further comprising a nanoparticle disposed within the space.

Form PCT/ISA/237 (Box No. V) (April 2005)